

Decision Document

Solid Waste Management Units B-15
Building 101-16 Catchment Pit
Hawthorne Army Depot
Hawthorne, Nevada



January 2000



Hawthorne Army
Depot



Decision Document SWMU B-15

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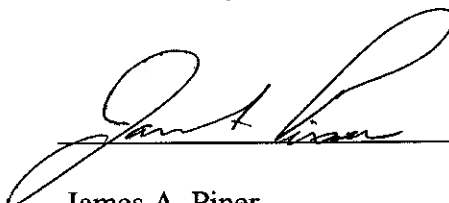
February 2000

ENVIRONMENTAL PROTECTION

The selected remedy is protective of human health and the environment. It has been shown that a complete pathway to human health and the environment does not exist, and there is no potential for an exposure pathway to be completed in the future.

U. S. Army

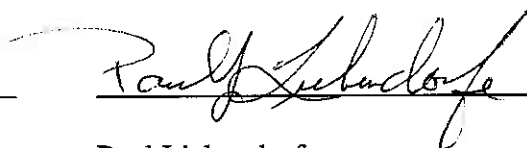
29 FEB 2000



James A. Piner
Lieutenant Colonel, U.S. Army

State of Nevada

22 MARCH 2000



Paul Liebendorfer
Chief, Bureau of Federal Facilities

Decision Document

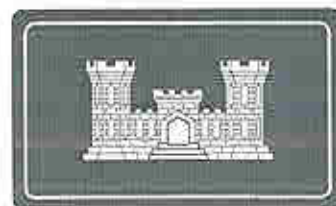
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Decision Document
SWMU B-15, Building 101-16 Catchment Pits
Hawthorne Army Depot
Hawthorne, Nevada

1.0 Introduction

This decision document describes the rationale for the proposed closure of SWMU B-15, Building 101-16 catchment pits at the Hawthorne Army Depot (HWAD), Hawthorne, Nevada. This document was prepared by the U.S. Army Corps of Engineers, Sacramento District (USACE), and HWAD for the Nevada Department of Environmental Protection (NDEP).

Tetra Tech, Inc. (Tt), and Ecology and Environment (E&E) were tasked by the USACE, to perform remedial investigations and ground water monitoring at HWAD. These tasks were conducted from early 1994 through 1997, primarily at solid waste management units (SWMUs) designated by the Army. The NDEP is the lead regulatory agency for environmental issues at HWAD. The purpose of the sampling was to determine the extent and degree of environmental impacts, if any, associated with activities performed at each SWMU. The primary goal of the assessment was to determine any environmental impacts at the SWMU and to report the findings, present conclusions, and recommend any remediation if necessary.

With guidance from the NDEP, basewide proposed closure goals (PCGs) for soil were established as acceptable levels so that SWMU closure could be recommended and to assist in directing the investigative efforts toward those SWMUs where the target analytes were of greatest concern (Appendix A). These PCGs were used as action levels throughout this investigation and are used for comparison with the detected analytes in this report.

2.0 Site History

SWMU B15 is in the HWAD's central magazine area, on the northeast side of the 101 Production Area (Figure 1-1). SWMU B15 consists of two inactive unlined surface catchment pits located by Buildings 101-16 (Figure 1-2).

3.0 Site Conditions

The soils encountered during the investigation of SWMU B15 consisted of brown and tan sandy silts. The site consists of two unlined impoundments. B15a is 75' x 15' x 8' and B15b is 40' x 15' x 5'. The US Army Environmental Hygiene Agency (USAEHA) estimated the depth to ground water in the vicinity of SWMU B15 at approximately 120 feet below ground surface (bgs) (USAEHA 1988).

4.0 INVESTIGATIONS

In 1994 a site assessment was conducted for SWMU's B-15a and B-15b by E&E. The assessment included the collection of 3 samples from each pit. The sample locations are shown in fig. 1-2.

5.0 Investigation Results

The analysis of the samples collected did not indicate any concentrations of contaminants above PCG's. Results of the analysis is shown in appendix B. It was recommended that the SWMU's should be backfilled with clean soil.

6.0 Remediation

No remediation at this SWMU

7.0 Remediation Results

Not Applicable

8.0 Public Involvement:

It is the U.S. Department of Defense and Army policy to involve the local community throughout the investigation process at an installation. To initiate this involvement, HWAD has established and maintains a repository library at the local public library. This repository includes final copies of all past studies and other documents regarding environmental issues at HWAD. As future environmental documents are made available to HWAD the repository shall be updated.

HWAD has solicited community participation in establishment of a restoration and advisory board (RAB). To date there has been insufficient response and HWAD has not formed a RAB. HWAD has held open houses to inform the public of on going environmental issues. HWAD continues to solicit community involvement, and will establish a RAB should sufficient community interest be obtained.

9.0 Recommendations

Based on assessment results, the basins at SWMU B-15 were backfilled with clean soil. It is recommended that SWMU B-15 (pits B-15a and B-15b) be closed and returned to the site master plan without any land use restrictions.

10. REFERENCES

- Department of Defense (DOD), 1991, Special Nevada Report, DE-AC08-88NV10715.
- Ecology and Environment, Inc., 1992, Site Visit and Interviews at Hawthorne Army Ammunition Plant.
- National Climatic Data Center, 1994, Annual Climatological Survey, Hawthorne, Nevada, 1982 through 1990.
- Ross, Donald C., 1961, *Geology and Mineral Deposits of Mineral County Nevada*, Nevada Bureau of Mines Bulletin 58.
- Sisk, Wayne E., 1992, *Reactivity Testing and Handling Explosive-Contaminated Soil*, Proceedings of 1992 Federal Environmental Restoration Conference, April 1992, Hazardous Materials Control Resources Institute.
- United States Army Corps of Engineers, 1994, Field Investigation Plan, RCRA Facility Assessment of 9 Solid Waste Management Units, Hawthorne Army Ammunition Plant, Hawthorne, Nevada. Sacramento District, Environmental Engineering Branch, DERP Section. Contract DACA05-91-D-0016, Delivery Order 13. April 8, 1994.
- United States Army Environmental Hygiene Agency (USAEHA), 1987 and 1988, Final Report Ground-Water Contamination Survey Number 38-26-0850-88 Evaluation of Solid Waste Management Units, Hawthorne Army Ammunition Plant, Hawthorne, Nevada.
- _____, 1992, Preliminary Assessment Screening Number 38-26-KS38-92, Babbitt Landfill Landfill, Hawthorne Army Ammunition Plant, Hawthorne, Nevada, 19-20 August 1992.
- United States Department of Agriculture, Soil Conservation Service, 1991, Soil Survey of Mineral County Area, Nevada.
- United States Environmental Protection Agency (EPA), 1989, 1989 Update to the Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and Dibenzofurans (CDDs and CDFs). D.G. Barnes, F.W. Kutz, and D.P. Bottimore, Risk Assessment Forum, Washington, D.C., March 1989.

_____, 1993, Provisional Guidance for Quantitative Hydrocarbons, EPA/600/R-93/089, Environmental Criteria Assessment Office, Cincinnati, Ohio.

_____, 1994, *Region IX Preliminary Remediation Goals (PRGs) First Half 1994*, February 1, 1994.

_____, 1994, *Health Effects Assessment Summary Tables (HEAST), Annual Update Fiscal Year 1994*, EPA/540-R-94-020 Office of Research and Development, Washington, D.C.

_____, 1994, *Integrated Risk Information System (IRIS)*, Entries on-line as of December 1994.

_____, 1994, *Drinking Water Regulations and Health Advisories*; Office of Water; May 1994.

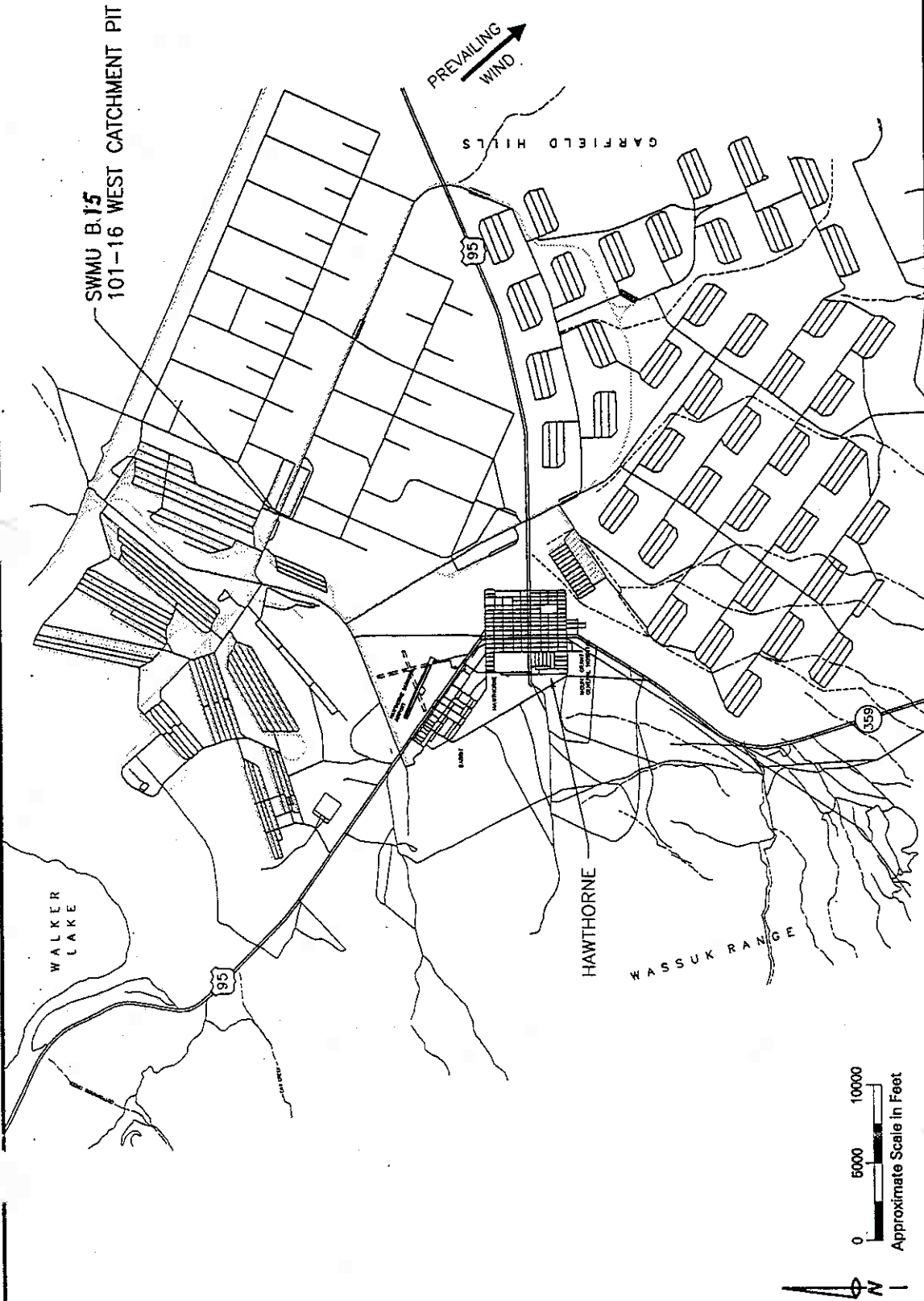
United States Geological Society, 1975, *Source of Nitrate in Water from Supply Well 8, Hawthorne Naval Ammunition Depot, Nevada*; Administrative Report, A. S. VanDenburgh and F. E. Rush, Carson City, Nevada, March 1975.

_____, 1976, *Groundwater Contamination by Percolating Explosives Wastes, Hawthorne Naval Ammunition Depot, Nevada, Phase I, Reconnaissance of the 103-41 Area*; Administrative Progress Report, A. S. VanDenburgh and R. R. Squires, Carson City, Nevada.

_____, 1980, *Ground-Water Contamination By Percolating Explosive Wastes, Hawthorne Army Ammunition Plant, Mineral County, Nevada, Phase I, II, and III*. VanDenburgh, A.S., et al., Carson City, Nevada.

_____, 1980, *Groundwater Contamination by Percolating Wastes, Hawthorne Army Ammunition Plant, Mineral County, Nevada, Phase IV, Reconnaissance Near Walker Lake*; Administrative Report, VanDenburgh, A.S., et al., Carson City, Nevada.

Water Work Corporation, 1990, Summary Report, Phase I Investigation for Closure of 101 Area Surface Impoundments, Prepared for Day and Zimmerman/Basil Corporation.



SOURCE: TETRA TECH FINAL DATA PACKAGE, 1996 (REV. 1997)

Location Map **SWMU B.15** **101-16 West Catchment Pit**

Hawthorne Army Depot
Hawthorne, Nevada

Figure 1-1

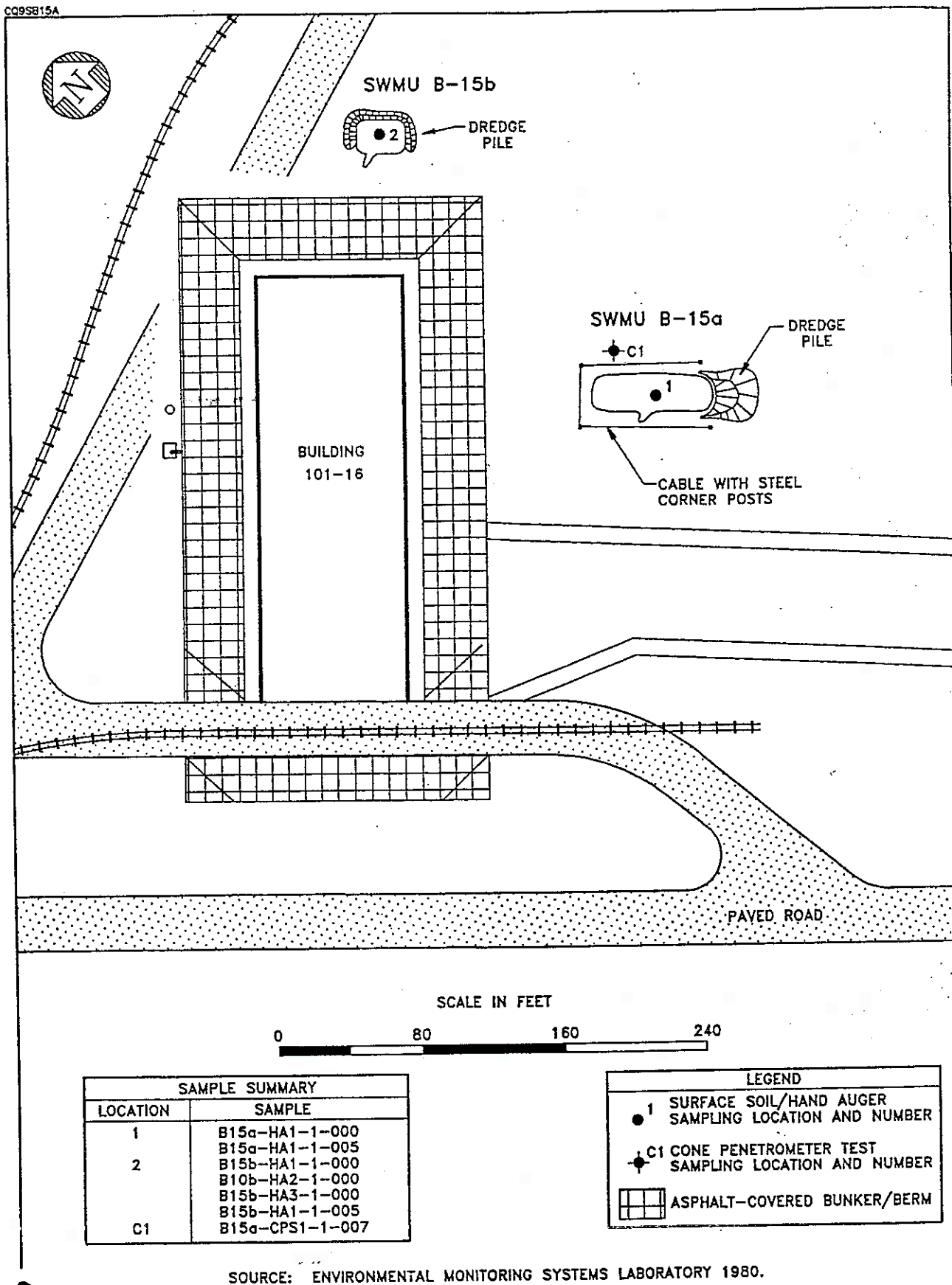


Figure 1-2 SAMPLE LOCATIONS AT SWMU'S B-15A AND B-15B
101-16 CATCHMENT PIT
HAWTHORNE ARMY DEPOT

Appendix A

**Proposed Closure Goals
Hawthorne Army Depot
Hawthorne, Nevada**

Constituent of Concern	Chemical Classification	Carcinogenic (C) or Non-Carcinogenic (NC)	HWAD Proposed Closure Goals for Soil (mg/kg)	HWAD Proposed Closure Goal Source
Nitrate	Anion	NC	128,000	Calculated Subpart S ^a
2-Amino-dinitrotoluene	Explosive	NC	-	NA ^a
4-Amino-dinitrotoluene	Explosive	NC	-	NA
1,3-Dinitrobenzene	Explosive	NC	8	Calculated Subpart S
2,4-Dinitrotoluene	Explosive	NC	160	Calculated Subpart S
2,6-Dinitrotoluene	Explosive	NC	80	Calculated Subpart S
HMX	Explosive	NC	4,000	Calculated Subpart S
Nitrobenzene	Explosive	NC	40	Calculated Subpart S
Nitrotoluene (2-, 3-, 4-)	Explosive	NC	800	Calculated Subpart S
RDX	Explosive	NC	64	Calculated Subpart S
Tetryl	Explosive	NC	800	Calculated Subpart S
1,3,5-Trinitrobenzene	Explosive	NC	4	Calculated Subpart S
2,4,6-Trinitrotoluene	Explosive	C	233	Calculated Subpart S
Aluminum	Metal	NC	80,000	Calculated Subpart S
Arsenic (cancer endpoint)	Metal	C & NC	30	Background ^a
Barium and compounds	Metal	NC	5,600	Calculated Subpart S
Beryllium and compounds	Metal	C	1	Background
Cadmium and compounds	Metal	NC	40	Calculated Subpart S
Chromium III and compounds	Metal	NC	80,000	Calculated Subpart S
Lead	Metal	NC	1000	PRG ^d
Mercury and compounds (inorganic)	Metal	NC	24	Calculated Subpart S
Selenium	Metal	NC	400	Calculated Subpart S
Silver and compounds	Metal	NC	400	Calculated Subpart S
Acenaphthene	PAH	NC	4,800	Calculated Subpart S
Benzo[a]anthracene	PAH	C	0.96	Calculated Subpart S
Benzo[a]pyrene	PAH	C	0.10	Detection Limit ^a
Benzo[b]fluoranthene	PAH	C	0.96	Calculated Subpart S
Benzo[k]fluoranthene	PAH	C	10	Calculated Subpart S
Chrysene	PAH	C	96	Calculated Subpart S
Dibenz[ah]anthracene	PAH	C	0.96	Calculated Subpart S
Fluoranthene	PAH	NC	3,200	Calculated Subpart S
Fluorene	PAH	NC	3,200	Calculated Subpart S
Indeno[1,2,3-cd]pyrene-	PAH	C	-	NA
Naphthalene	PAH	NC	3,200	Calculated Subpart S
Pyrene	PAH	NC	2,400	Calculated Subpart S
Total Petroleum Hydrocarbons as Diesel (TPH-d)	PAH	C	100	NDEP Level Clean-up ^f
Polychlorinated biphenyls (PCBs)	PCBs	C	25	TSCA ^g
Bis(2-ethylhexyl)phthalate (DEHP)	SVOC	C	1,600	Calculated Subpart S
Bromoform (tribromomethane)	SVOC	C	89	Calculated Subpart S

**Proposed Closure Goals
Hawthorne Army Depot
Hawthorne, Nevada**

Constituent of Concern	Chemical Classification	Carcinogenic (C) or Non-carcinogenic (NC)	HWAD Proposed Closure Goals for Soil (mg/kg)	HWAD Proposed Closure Goal Source
Butyl benzyl phthalate	SVOC	NC	16,000	Calculated Subpart S
Dibromochloromethane	SVOC	C	83	Calculated Subpart S
Dibutyl-phthalate	SVOC	NC	8,000	Calculated Subpart S
Diethyl phthalate	SVOC	NC	64,000	Calculated Subpart S
Phenanthrene	SVOC		-	NA
Phenol	SVOC	NC	48,000	Calculated Subpart S
Acetone	VOC	NC	800	Calculated Subpart S
Anthracene	VOC	NC	24,000	Calculated Subpart S
Benzene	VOC	C	24	Calculated Subpart S
Bis(2-chloroisopropyl)ether	VOC	C	3,200	Calculated Subpart S
Bromomethane	VOC	NC	112	Calculated Subpart S
Carbon tetrachloride	VOC	C	5	Calculated Subpart S
Chlorobenzene	VOC	NC	1,600	Calculated Subpart S
Chloroform	VOC	C	115	Calculated Subpart S
Chloromethane	VOC	C	538	Calculated Subpart S
Dibromomethane	VOC	C	0.008	Calculated Subpart S
1,2-Dichlorobenzene	VOC	NC	7,200	Calculated Subpart S
1,4-Dichlorobenzene	VOC	C	18,300	Calculated Subpart S
Dichlorodifluoromethane	VOC	C	16,000	Calculated Subpart S
Ethylbenzene	VOC	NC	8,000	Calculated Subpart S
Methylene bromide	VOC	NC	800	Calculated Subpart S
Methylene chloride	VOC	C	4,800	Calculated Subpart S
2-Methylnaphthalene	VOC		-	NA
1,1,2,2-Tetrachloroethane	VOC	C	35	Calculated Subpart S
Tetrachloroethylene (PCE)	VOC	C & NC	800	Calculated Subpart S
Toluene	VOC	NC	16,000	Calculated Subpart S
1,1,1-Trichloroethane	VOC	NC	7,200	Calculated Subpart S
Trichloroethylene (TCE)	VOC	C & NC	480	Calculated Subpart S
Trichlorofluoromethane	VOC	NC	24,000	Calculated Subpart S
1,2,3-Trichloropropane	VOC	C	480	Calculated Subpart S
Vinyl chloride	VOC	C	0.37	Calculated Subpart S
Xylene Total (m-, o-, p-)	VOC	NC	160,000	Calculated Subpart S
2,3,7,8-TCDD	Dioxin	C	0.000005	Calculated Subpart S

^a RCRA 55 FR 30870

^b Not available

^c Highest background concentration detected in 50 background soil samples

^d Smucker, Stanford J. USEPA Region IX, Preliminary Remedial Goals, Second Half, Sep. 1995

^e Method detection limit for Volatile Organic Compounds by EPA Method 8260 or

Semi-Volatile Organic Compounds analyzed by EPA Method 8270

^f Nevada Division of Environmental Protection

^g Cleanup level for PCB spills in accordance with Toxic Substance and Control Act Spill Policy Guidelines 40 CFR 761

Appendix B

Table 3-26			
PARAMETERS DETECTED IN SOIL SAMPLES AT SWMU B-15A CONCENTRATIONS IN mg/kg (ppm)			
Sample No./ Parameter	B-15A HA1-1-000	B-15A HA1-1-005	B-15A CPS1-1-007
Job Number	9401.011	9401.011	9401.124
Sample Depth (feet)	0.5 - 1.0	5.0 - 5.5	7.0 - 8.0
Solids-Total (%)	95	98	93
pH	7.8 J	8.8 J	8.4 J
Nitrate-nitrogen	13	3.5 J	ND
Metals			
Arsenic	2.6	ND	1.3
Barium	51	39	320
Chromium (total)	4.9	2.1	7.3
Lead	4.0	0.90	5.1
Nitroaromatics			
RDX	ND	0.69 JN	ND
1,3,5-TNB	ND UJ	0.33 JN	ND UJ
2,4,6-TNT	2.3	0.34 JN	ND

NOTE: Samples B15A-HA1-1-000 and B15A-HA1-1-005 were analyzed for semivolatile organics, but none were detected.

Key:

- JN - Estimated value, analyte not confirmed by alternate procedure.
- ND - Not detected above quantitation limit.
- UJ - Estimated value, due to variance from QC limits.

Table 3-27 PARAMETERS DETECTED IN SURFACE AND NEAR SURFACE SOIL SAMPLES AT SWMU B-15B CONCENTRATIONS IN mg/kg (ppm)			
Sample No./ Parameter	B-15B HA1-1-000	B-15B HA2-1-000	B-15B HA1-1-005
Job Number	9401.011	9401.011	9401.011
Sample Depth (feet)	0.5 - 1.0	0.5 - 1.0	5.0 - 5.5
Solids-Total (%)	96	96	97
pH	7.4 J	7.2 J	8.6 J
Nitrate-nitrogen	ND	3.0 J	ND
Metals			
Arsenic	2.7	1.7	1.7
Barium	69	73	87
Chromium (total)	5.1	4.9	3.2
Lead	5.3	4.8	2.2

NOTE: Nitroaromatics were analyzed for, but not detected in these samples. Samples B-15B-HA1-1-000 and B-15B-HA2-1-000 were also analyzed for semivolatile organics, but none were detected.

Key:

- J - Estimated value.
- ND - Not detected above quantitation limit.

Appendix C



